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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/629,609 | 07/30/2003 | Shouji Katsumata | 115922 | 6115 |
| 25944 | 7590 | 11/16/2004 | EXAMINER | |
| OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320 | | | CHANG, CHING | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3748 | |

DATE MAILED: 11/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/629,609 | KATSUMATA, SHOUJI | |
| | Examiner | Art Unit | |
| | Ching Chang | 3748 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 02 September 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-10 is/are rejected.
- 7) Claim(s) 11-13 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

This Office action is in response to the amendment filed on September 2, 2004.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. ***Claims 1-2, 6, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ickinger (US Patent 5,875,754) in view of Rose (US Patent 5,529,030).***

Ickinger discloses an internal combustion engine comprising: a head section (1); cams (17, 18) driven valves formed in the head section and driving the intake valves and the exhaust valves (3); and at least two lubricating oil passages (66; 77; 75; 76), one (66) of the at least two lubricating oil passages being formed to the cam driven valves independently from the other lubricating oil passage (77), further comprising: a block section (2) that includes a piston (in 10) and a crankshaft connected thereto; a first lubricating oil passage (53, 55, 57, 62) to the head section including the lubricating oil passage to the cam driven valves; and a second lubricating oil passage (through 54)

to the block section, the second lubricating oil passage being formed independently from the first lubricating oil passage.

Ickinger, however, fails to disclose an electromagnetically driven valve formed in the head section and driving one of an intake valve and an exhaust valve.

The patent to Rose on the other hand, teaches that it is conventional in the engine valve actuator art, to have utilized an electromagnetically driven valve (30, 44) in the head section to drive one of an intake valve and an exhaust valve (11).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the electromagnetically driven valve as taught by Rose, to replace one of the cam driven valves in the Ickinger device, since the use thereof would provide an more compact and cost effective engine valve actuator.

3. ***Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ickinger in view of Rose (as applied to claim 1 above) in view of Kobayashi (US Patent No. 6,302,071).***

The modified Ickinger device discloses the invention, however, fails to disclose the lubricating oil passage to the electromagnetically driven valve including a lubricating oil passage to the cam driven valve.

The patent to Kobayashi on the other hand, teaches that it is conventional in the art of an oil passage system of valve moving apparatus, to utilize a lubricating oil passage (74, 77) to the electromagnetically driven valve including a lubricating oil passage (75) to the cam driven valve.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the lubricating oil passage to the electromagnetically driven valve including a lubricating oil passage to the cam driven valve as taught by Kobbayashi in the modified Ickinger device, since the use thereof would provide an improved oil passage system for an engine valve moving apparatus.

4. *Claims 4-5 and 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ickinger in view of Rose (as applied to claim 1 above), and further in view of Hu (US Patent No. 5,680,841).*

The modified Ickinger device discloses the invention, however, fails to disclose the lubricating oil supplied through the lubricating oil passage to the electromagnetically driven valve having a different type from that of lubricating oil supplied through the other lubricating oil passage.

The patent to Hu on the other hand, teaches that it is conventional in the art of an engine with combined cam and electro-hydraulic engine valve control, to utilize a lubricating oil supplied through the lubricating oil passage to the electromagnetically driven valve having a different type from that of lubricating oil supplied through the other lubricating oil passage (See Col. 3, line 18 through Col. 4, line 13).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the hydraulic fluid as taught by Hu in the modified Ickinger device, since the use thereof would provide an alternative choice of the lubricating oil for an combined cam and electromagnetically driven engine valve.

5. ***Claims 1-2, 6, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muraji (JP '596) in view of Ickinger (US Patent 5,875,754).***

Muraji discloses an internal combustion engine comprising: a head section (See Fig. 4); an electromagnetically (50) driven valve formed in the head section and driving one of an intake valve (310) and an exhaust valve (330); a cam (350) driven valve formed in the head section (1) and driving the other valve; a block section that includes a piston (in 340) and a crankshaft connected thereto.

Muraji, however, fails to disclose the lubricating oil passages to the said electromagnetically driven valve and the cam driven valve.

The patent to Ickinger on the other hand, teaches that it is conventional in the art of an arrangement of lubricating oil passages in an engine cylinder head, to have two independent lubrication oil passages (63, 66; 74, 75) in the cylinder head section to two cam driven valves (17, 18).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the two independent lubricating oil passages as taught by Ickinger in the Muraji device, since the use thereof would provide an improved engine valve actuator with a proper oil lubrication.

Allowable Subject Matter

6. Claims 11-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ching Chang whose telephone number is (703)306-3478. The examiner can normally be reached on M-Th, 7:00 AM -5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (703)308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner



Ching Chang



Thomas Denion
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700